The lifespan of a Star can be broken up into 3 categories. Birth, Life and Death
(Some stars ofcourse also break these categories)

1. Stars begin their life by cosmic dust collapsing into a singular point. The dust accumulates in the center until the mass is big enough (Imparting enough pressure and temperature) that Nuclear Fusion starts happening in the center of the dust cloud. When this stage is reached, The dust cloud in the center (now called a proto-star) starts bombarding the remaining nearby cosmic dust with photons. This pushes out any remaining cosmic dust near the proto-star, thus limiting the mass of that proto-star. Once all the dust has scattered away. The Proto-Star is called a Star (A Main sequence star to be exact).

2. The middle life of a Star is pretty bland. It slowly fuses it's hydrogen in the core into helium. And when the hydrogen is exhausted. The star begins to collapse as there is not enough photon pressure to fight the gravitational collapse of the star. But as the star collapses. The temperature in its core increases even more (due to an increasing pressure). Once this temperature reaches a certain point. The star is now able to fuse Helium into Carbon. This cycle repeats when the helium runs out and the star starts fusing carbon into Oxygen. This keeps happening until the star reaches to Iron in its core (Mind you this takes billions of years depending upon how massive the star is). Now Iron is the most stable (nuclear wise) element. So it takes more energy to fuse iron into other elements than it releases after being fused. This creates a negative feedback loop and thus the star ultimately collapses completely because there is nothing pushing against the gravitational collapse of the star.

3. Now after the star begins to collapse. All the material collapses into the core (because of gravity) at 25% the speed of light! But then the material bounces off the core. This cycle of collapsing and bouncing keeps happening for a few times until the star explodes out in a brilliant supernova. This collapse compresses the core further increasing it's density. And depending on the amount of compression the core goes through. It can either become a Neutron Star or a Black Hole.

Do mind that this only holds for Stars which are atleast 8 solar masses (solar mass means the mass of our sun, so 8 solar masses means 8 times the mass of our sun). Any star with fewer mass than 8 solar masses does not have enough mass to become a supernova. It undergoes a different process. But I won't explain that. I'm leaving that for others to research on their own. Trust me it's interesting and exciting to learn about!!

Thanks a lot for reading this. If anyone here has any other questions regarding Space and/or How something works. Please do ask it here. I'll try my best to answer all of them to the best of my ability.